



\*\*FILE\*\*ID\*\*LIBEMUL

κ 6

(2) 46 DECLARATIONS  
(3) 75 LIBSEMUL - Execute EMUL instruction

0000 1 .TITLE LIBSEMUL - Execute EMUL instruction  
0000 2 :IDENT /1-001/ ; File: LIBEMUL.MAR Edit: SBL1001  
0000 3 :  
0000 4 :  
0000 5 :\*\*\*\*\*  
0000 6 :\*  
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0000 27 :  
0000 28 :  
0000 29 :++  
0000 30 :FACILITY: General Utility Library  
0000 31 :  
0000 32 :ABSTRACT:  
0000 33 :  
0000 34 : This module contains LIBSEMUL, which makes the VAX EMUL instruction  
0000 35 : available as a callable procedure.  
0000 36 :  
0000 37 :ENVIRONMENT: Runs at any access mode, AST Reentrant  
0000 38 :  
0000 39 :AUTHOR: Steven B. Lionel, CREATION DATE: 8-July-1981  
0000 40 :  
0000 41 :MODIFIED BY:  
0000 42 :  
0000 43 :1-001 - Original. SBL 8-July-1981  
0000 44 :--

0000 46 .SBTTL DECLARATIONS  
0000 47 :  
0000 48 : LIBRARY MACRO CALLS:  
0000 49 :  
0000 50 : SSSDEF ; Define SSS symbols  
0000 51 :  
0000 52 : EXTERNAL DECLARATIONS:  
0000 53 :  
0000 54 : .DSABL GBL ; Force all external symbols to be declared  
0000 55 : NONE  
0000 56 :  
0000 57 : MACROS:  
0000 58 :  
0000 59 : NONE  
0000 60 :  
0000 61 : EQUATED SYMBOLS:  
0000 62 :  
0000 63 : NONE  
0000 64 :  
0000 65 : OWN STORAGE:  
0000 66 :  
0000 67 : NONE  
0000 68 :  
0000 69 : PSECT DECLARATIONS:  
0000 70 :  
00000000 71 : .PSECT \_LIB\$CODE PIC, USR, CON, REL, LCL, SHR, -  
0000 72 : EXE, RD, NOWRT, LONG  
0000 73 :

0000 75 .SBTTL LIBSEMUL - Execute EMUL instruction  
 0000 76 :++  
 0000 77 : FUNCTIONAL DESCRIPTION:  
 0000 78 :  
 0000 79 : This procedure makes the VAX EMUL instruction available as  
 0000 80 : a callable procedure.  
 0000 81 :  
 0000 82 : The multiplicand argument is multiplied by the multiplier  
 0000 83 : argument giving a double-length result. The addend argument  
 0000 84 : is sign-extended to double-length and added to the result, and  
 0000 85 : then the product argument is replaced by the final result.  
 0000 86 :  
 0000 87 : For more information, see the VAX-11 Architecture Handbook.  
 0000 88 :  
 0000 89 : CALLING SEQUENCE:  
 0000 90 :  
 0000 91 : status.wlc.v = LIBSEMUL (multiplier.rl.r, multiplicand.rl.r,  
 0000 92 : addend.rl.r, product.wq.r)  
 0000 93 :  
 0000 94 : FORMAL PARAMETERS:  
 0000 95 :  
 00000004 0000 96 : multiplier = 4 ; The address of the longword integer multiplier.  
 00000008 0000 97 : multiplicand = 8 ; The address of the longword integer multiplicand.  
 0000000C 0000 98 : addend = 12 ; The address of the longword integer addend.  
 00000010 0000 99 : product = 16 ; The address of a quadword integer for the  
 00000010 0000 100 : product result.  
 00000010 0000 101 :  
 00000010 0000 102 :  
 00000010 0000 103 :  
 00000010 0000 104 :  
 00000010 0000 105 : IMPLICIT INPUTS:  
 00000010 0000 106 :  
 00000010 0000 107 : NONE  
 00000010 0000 108 :  
 00000010 0000 109 : IMPLICIT OUTPUTS:  
 00000010 0000 110 :  
 00000010 0000 111 : NONE  
 00000010 0000 112 :  
 00000010 0000 113 : COMPLETION STATUS:  
 00000010 0000 114 :  
 00000010 0000 115 : SSS\_NORMAL, normal successful completion  
 00000010 0000 116 :  
 00000010 0000 117 : SIDE EFFECTS:  
 00000010 0000 118 :  
 00000010 0000 119 : NONE  
 00000010 0000 120 :  
 00000010 0000 121 :--  
 00000010 0000 122 :  
 4000 0000 123 :.ENTRY LIB\$EMUL, "M<IV>" ; Entry point  
 10 BC 0C BC 04 BC 08 BC 7A 0002 124 :  
 0002 125 : EMUL @multiplicand(AP), @multiplier(AP), -  
 0008 126 : @addend(AP), @product(AP)  
 0008 127 :  
 50 01 D0 0008 128 :  
 04 000E 129 : MOVL #SSS\_NORMAL, R0 ; The EMUL can not fail  
 000F 130 : RET  
 000F 131 :.END ; End of module LIB\$EMUL

## LIBSEMUL Symbol table

### - Execute EMUL instruction

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16-SEP-1984 00:06:36 VAX/VMS Macro V04-00  
6-SEP-1984 11:06:25 [LIBRTL.SRC]LIBEMUL.MAR;1

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(3)

ADDEND  
LIBSEMUL  
MULTIPLICAND  
MULTIPLIER  
PRODUCT  
SSS NORMAL

= 00000000C  
= 000000000 RG 02  
= 000000008  
= 000000004  
= 00000010  
= 00000001

## ! Psect synopsis !

**PSECT name**

Allocation	PSECT No.	Attributes											
00000000 ( 0.)	00 ( 0.)	NOPI	USR	CON	ABS	LCL	NOSHR	NOEXE	NORD	NOWRT	NOVEC	BYTE	
00000000 ( 0.)	01 ( 1.)	NOPI	USR	CON	ABS	LCL	NOSHR	EXE	RD	WRT	NOVEC	BYTE	
0000000F ( 15.)	02 ( 2.)	PIC	USR	CON	REL	LCL	SHR	EXE	RD	NOWRT	NOVEC	LONG	

## ! Performance indicators !

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.05	00:00:01.48
Command processing	102	00:00:00.28	00:00:02.20
Pass 1	179	00:00:02.41	00:00:10.72
Symbol table sort	0	00:00:00.42	00:00:02.64
Pass 2	40	00:00:00.47	00:00:03.02
Symbol table output	3	00:00:00.02	00:00:00.02
Psect synopsis output	2	00:00:00.01	00:00:00.01
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	357	00:00:03.67	00:00:20.10

The working set limit was 1200 pages.

19637 bytes (39 pages) of virtual memory were used to buffer the intermediate code.

There were 30 pages of symbol table space allocated to hold 412 non-local and 0 local symbols.

131 source lines were read in Pass 1, producing 12 object records in Pass 2.

8 pages of virtual memory were used to define 7 macros.

## Macro library statistics

### Macro Library name

## Macros defined

\$255\$PWA28:[SYSLIB]STARLET.MLB:2

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469 GETS were required to define 4 macros.

There were no errors, warnings or information messages.

**MACRO/ENABLE=SUPPRESSION/DISABLE=(GLOBAL,TRACEBACK)/LIS=LIS\$:LIBEMUL/OBJ=OBJ\$:LIBEMUL MSRC\$:LIBEMUL/UPDATE=(ENH\$:LIBEMUL)**

0206 AH-BT13A-SE  
VAX/VMS V4.0

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